

IN THE CLAIMS

Claim 1. (Currently Amended) A method of addressing a protocol data unit by a first network construct to a second network construct on a communication network, the method comprising the steps of:

generating, ~~a capability addressed~~ by the first network construct, the protocol data unit, the protocol data unit containing that contains, as an address, at least one capability of the second network construct, the capability addressed protocol data unit being addressed to all constructs on the communication network having the at least one capability, the capability addressed protocol data unit specifying at least one of a set of possible capabilities to enable the capability addressed protocol data unit to be selectively received by only those network constructs with the selected capability; and

issuing, by the first network construct, the protocol data unit for transmission onto the communication network.

Claim 2. (Original) The method of claim 1, wherein the address is a destination address.

Claim 3. (Original) The method of claim 2, wherein the destination address is a destination Media Access Control (MAC) address.

Claim 4. (Original) The method of claim 1, wherein the second network construct is a provider edge network element, and wherein the capability is specific to provider edge network elements.

Claim 5. (Original) The method of claim 1, wherein the second network construct is a port of a particular type on a network element, and wherein the capability is specific to that type of port.

Claim 6. (Original) The method of claim 1, further comprising listening for a reply to the protocol data unit from the communication network.

Claim 7. (Original) The method of claim 6, wherein receipt of a reply indicates the presence of the network construct on the communication network.

Claim 8. (Currently Amended) A method of receiving a protocol data unit by a network construct on a communication network, the method comprising:

filtering protocol data units, by the network construct, to identify capability addressed protocol data units that contain, as an address, at least one capability, the capability addressed protocol data unit being addressed to all constructs on the communication network having the at least one capability, the capability addressed protocol data unit specifying at least one of a set of possible capabilities to enable the capability addressed protocol data unit to be selectively received by only those network constructs with the selected capability; and

receiving, by the network construct, the identified capability addressed protocol data units that match at least one capability of the network construct.

Claim 9. (Canceled)

Claim 10. (Original) The method of claim 8, wherein the address is a destination address.

Claim 11. (Original) The method of claim 8, wherein the protocol data unit contains a source Media Access Control (MAC) address and a destination MAC address, and wherein the address is at least one of the source MAC address and the destination MAC address.

Claim 12. (Currently Amended) A method of receiving a protocol data unit by a network construct on a communication network, the method comprising:

filtering protocol data units, by the network construct, to identify protocol data units that contain, as an address, at least one capability; and

receiving identified protocol data units by the network construct;

wherein the protocol data unit contains a source Media Access Control (MAC) address and a destination MAC address, and wherein the address is at least one of the source MAC address and the destination MAC address; and

wherein the destination MAC address comprises:

a first field containing an Organizationally Unique Identifier (OUI) that identifies the protocol data unit to the network construct as containing a capability based address; and

a second field identifying the capability of the network construct to which the protocol data unit is addressed.

Claim 13. (Currently Amended) The method of claim 8, the method further comprising the step of responding to the protocol data unit by the network construct.

Claim 14. (Original) The method of claim 13, wherein the step of responding comprises generating a response protocol data unit and sending the response protocol data on the communication network.

Claim 15. (Currently Amended) A method of discovering the presence of a any network constructs with a first capability on a communication network, the method comprising the steps of:

flooding, by a first network construct, a capability addressed protocol data unit on the communication network, the capability addressed protocol data unit being addressed to any all network constructs on the communication network having the at least one capability, the capability addressed protocol data unit specifying at least one of a set of possible capabilities to enable the capability addressed protocol data unit to be selectively received by only those network constructs with the selected capability; and

listening, by the first network construct, for a response to the capability addressed protocol data unit.

Claim 16. (Original) The method of claim 15, wherein the protocol data unit is an Operation Administration and Maintenance (OAM) packet in an OAM flow.

Claim 17. (Original) The method of claim 15, wherein the protocol data unit is a hello message.

Claim 18. (Original) The method of claim 15, wherein the step of flooding comprises at least one of broadcasting and multicasting to cause the protocol data unit to be forwarded throughout a domain on the communication network.

Claim 19. (Currently Amended) A network construct, comprising:

control logic configured to enable the network construct to receive capability addressed protocol data units, each capability addressed protocol data unit being addressed to all constructs on the communication network having the at least one capability, each capability addressed protocol data unit specifying at least one of a set of possible capabilities to enable the capability addressed protocol data unit to be selectively received by only those network constructs with the selected capability, and wherein the control logic is further configured to select capability addressed protocol data units for processing which have a capability indication that matches a capability of the network ~~element~~ construct.

Claim 20. (Previously Presented) The network construct of claim 19, wherein the control logic is further configured to enable the network construct to respond to capability addressed protocol data units.